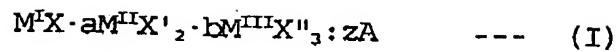


What is claimed is:

- 5 1. A radiation image storage panel comprising a phosphor layer which is produced by gas phase deposition and composed of prismatic phosphors, wherein the phosphor layer has a relative density higher or same on a lower side than or as on an upper side, and the prismatic phosphors have a diameter which is larger on an upper side than on a lower side.
10
2. The radiation image storage panel of claim 1, wherein the relative density of the phosphor layer decreases from the lower side to the upper side, while the diameter of the prismatic phosphors increases from the
15 lower side to the upper side.
3. The radiation image storage panel of claim 1, wherein the prismatic phosphors have a mean diameter in the range of 0.1 to 50 μm on both of the upper side and
20 lower side.
4. The radiation image storage panel of claim 1, the relative density of the phosphor layer is in the range of 0.75 to 0.96 on both of the upper side and lower
25 side.
5. The radiation image storage panel of claim 1, which further comprises a substrate on the lower side.
- 30 6. The radiation image storage panel of claim 1, wherein the phosphor is a stimuable phosphor.
7. The radiation image storage panel of claim 6, wherein the stimuable phosphor is an alkali metal halide
35 phosphor having the formula (I):

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in which M^I is at least one alkali metal element selected from the group consisting of Li, Na, K, Rb and Cs; M^{II} is
5 at least one alkaline earth metal element or divalent metal element selected from the group consisting of Be, Mg, Ca, Sr, Ba, Ni, Cu, Zn and Cd; M^{III} is at least one rare earth element or trivalent metal element selected from the group consisting of Sc, Y, La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Al, Ga and In;
10 each of each of X, X' and X" independently is at least one halogen selected from the group consisting of F, Cl, Br and I; A is at least one rare earth element or metal element selected from the group consisting of Y, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Mg, Cu, and Bi; and a, b and z are numbers satisfying the conditions of $0 < a < 0.5$, $0 < b < 0.5$ and $0 < z < 1.0$, respectively.

8. The radiation image storage panel of claim 7,
20 wherein the stimuable phosphor is an europium activated cesium bromide phosphor.

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